AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A gene transfer vector comprising a nucleic acid sequence ~~which encodes at least an immunogenic portion of one or more exotoxins of *Bacillus anthracis*~~ and a heterologous sorting signal, wherein the nucleic acid sequence comprises SEQ ID NO: 1 ~~codons expressed more frequently in humans than in *Bacillus anthracis*~~.

2. (Currently Amended) The gene transfer vector of claim 1, wherein the nucleic acid sequence further comprises a sequence that encodes at least an immunogenic portion of one or more exotoxins selected from the group consisting of ~~protective antigen (PA),~~ edema factor ~~(EF)~~, and lethal factor ~~(LF)~~.

3. (Currently Amended) The gene transfer vector of claim 2, wherein the nucleic acid sequence comprises a sequence selected from the group consisting of SEQ ID NO: 2 and SEQ ID NO: 3 ~~encodes protective antigen~~.

4.-5. (Canceled)

6. (Original) The gene transfer vector of claim 1, wherein the heterologous sorting signal directs the exotoxin to a subcellular sorting pathway.

7. (Original) The gene transfer vector of claim 6, wherein the subcellular sorting pathway is selected from the group consisting of an extracellular pathway, a cytoplasmic pathway, a cell membrane pathway, a lysosome pathway, an endoplasmic reticulum pathway, and a degradative pathway.

8. (Original) The gene transfer vector of claim 1, wherein the heterologous sorting signal is a lysosomal-associated membrane protein-1 sorting signal.

9. (Original) The gene transfer vector of claim 1, wherein the nucleic acid sequence further encodes a heterologous signal peptide.

10. (Original) The gene transfer vector of claim 9, wherein the heterologous signal peptide is a lysosomal-associated membrane protein-1 signal peptide.

11. (Withdrawn) The gene transfer vector of claim 1, which is a non-viral vector.

12. (Withdrawn) The gene transfer vector of claim 11, wherein the non-viral vector is a plasmid formulated with a lipid or a polymer.

13. (Original) The gene transfer vector of claim 1, which is a viral vector.

14. (Original) The gene transfer vector of claim 13, wherein the viral vector is an adenoviral vector.

15. (Original) The gene transfer vector of claim 14, wherein the adenoviral vector is replication-deficient.

16. (Original) The gene transfer vector of claim 15, wherein the adenoviral vector is a human adenoviral vector.

17. (Original) The gene transfer vector of claim 15, wherein the adenoviral vector is a non-human primate adenoviral vector.

18. (Original) The gene transfer vector of claim 17, wherein the adenoviral vector is a chimpanzee adenoviral vector.

19. (Original) The gene transfer vector of claim 1, wherein the gene transfer vector transduces antigen presenting cells.

20. (Currently Amended) The gene transfer vector of claim 1, wherein the gene transfer vector is ~~which comprises~~ a replication-deficient adenoviral vector ~~comprising a nucleic acid sequence encoding at least an immunogenic portion of protective antigen of *Bacillus anthracis* and a heterologous sorting signal, wherein the nucleic acid sequence is comprises codons expressed more frequently in humans than in *Bacillus anthracis*~~.

21. (Original) A pharmaceutical composition comprising the gene transfer vector of claim 1 and a pharmaceutically acceptable carrier.

22.-41. (Canceled)

42. (New) A method of producing an immune response against *Bacillus anthracis* in a host, which method comprises administering to the host the gene transfer vector of claim 1, and wherein the nucleic acid sequence is expressed to produce the immunogenic portion of the one or more exotoxins in the host, thereby producing an immune response against *Bacillus anthracis*.

43. (New) The method of claim 42, wherein the heterologous sorting signal directs the exotoxin to a subcellular sorting pathway.

44. (New) The method of claim 43, wherein the subcellular sorting pathway is selected from the group consisting of an extracellular pathway, a cytoplasmic pathway, a cell membrane pathway, a lysosome pathway, an endoplasmic reticulum pathway, and a degradative pathway.

45. (New) The method of claim 42, wherein the heterologous sorting signal is a lysosomal-associated membrane protein-1 sorting signal.

46. (New) The method of claim 42, wherein the nucleic acid sequence further encodes a heterologous signal peptide.

47. (New) The method of claim 46, wherein the heterologous signal peptide is a lysosomal-associated membrane protein-1 signal peptide.

48. (New) The method of claim 42, wherein the gene transfer vector is a non-viral vector.

49. (New) The method of claim 48, wherein the non-viral vector is a plasmid formulated with a lipid or a polymer.

50. (New) The method of claim 42, wherein the gene transfer vector is a viral vector.

51. (New) The method of claim 50, wherein the viral vector is an adenoviral vector.

52. (New) The method of claim 51, wherein the adenoviral vector is replication-deficient.

53. (New) The method of claim 51, wherein the adenoviral vector is a human adenoviral vector.

54. (New) The method of claim 51, wherein the adenoviral vector is a non-human primate adenoviral vector.

55. (New) The method of claim 54, wherein the adenoviral vector is a chimpanzee adenoviral vector.

56. (New) The method of claim 42, wherein the gene transfer vector is administered to antigen presenting cells of the host.

57. (New) The method of claim 56, wherein the antigen presenting cells are dendritic cells.